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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,517	04/20/2001	Patrick S. Meagher	41 EB-1006	4623

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EXAMINER

MANIWANG, JOSEPH R

ART UNIT PAPER NUMBER

2144

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/681,517

Applicant(s)

MEAGHER ET AL.

Examiner

Joseph R. Maniwang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6-15 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-15 and 17-21 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/27/05 has been entered.

Claim Objections

2. Claim 8 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 8 recites "at least one IED configured with said Ethernet gateway" while independent claim 1 already recites "at least one intelligent end device (IED)" and "an Ethernet gateway configured to...transmit the first set of messages to said at least one IED".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 7-9, 14, 17, 19, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Hart et al. (U.S. Pat. No. 6,005,759).
5. Regarding claim 1, Hart disclosed a method and system comprising at least one intelligent end device (IED) (see column 2, lines 19-21, 63-67; column 4, lines 42-47); a control computer comprising an Ethernet server configured to create and encapsulate a first set of messages intended for said at least one IED, in an industry standard format (see column 2, lines 22-28); and an Ethernet gateway configured to communicate with said server and transmit the first set of messages to said at least one IED, wherein said gateway further configured to encapsulated a second set of messages returned from said at least one IED with an industry standard header and footer, and transmit the encapsulated second set of messages to said Ethernet server (see column 2, lines 22-51).
6. Regarding claims 7 and 14, Hart disclosed the method and system wherein the server is further configured to act as a communications server for other program resident in an applications layer (see column 4, lines 47-50).
7. Regarding claim 8, Hart disclosed at least one IED configured with said Ethernet gateway as claimed (see column 4, lines 42-47).

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8. Regarding claim 9, Hart disclosed a method and system comprising electrically connecting the Ethernet gateway to the Ethernet server (see column 4, lines 37-42); configuring the server to create and encapsulate a first set of messages intended for IEDs in an industry standard format, wherein said configuring the server to create and encapsulate the first set of messages includes configuring the server to generate a second set of encapsulated messages by encapsulating the first set of messages (see column 2, lines 22-38); and configuring the gateway to remove the encapsulating from the second set of encapsulated messages and to transmit the first set of messages to the IEDs, wherein said configuring the gateway to remove the encapsulation from the second set of encapsulated messages comprises configuring the gateway to extract an industry standard header and an industry standard footer from the second set of encapsulated messages (see column 2, lines 36-38; column 14, lines 41-49).
9. Regarding claim 17, Hart disclosed a method and system configured to receive a first set of Ethernet messages from an Ethernet server in an industry standard format (see column 13, lines 52-62); remove both an Ethernet header and footer from the first set of Ethernet messages, leaving a second set of messages for transmission to at least one intelligent end device (IED) (see column 13, lines 52-62); and transmit the second set of messages to the at least one IED, wherein the Ethernet gateway is located outside the at least one IED (see column 13, lines 52-62).
10. Regarding claim 19, Hart disclosed the method and system wherein said programmable hardware device is further programmed to receive a third set of

messages from intelligent end devices (see column 2, lines 45-51; column 13, lines 60-62).

11. Regarding claim 20, Hart disclosed the method and system further programmed to encapsulate the third set of messages with an Ethernet header and footer; and transmit the encapsulated messages to an Ethernet server (see column 2, lines 45-51; column 13, lines 60-62).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 2, 3, 6, 10-13, 15, 18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hart et al. (U.S. Pat. No. 6,005,759), hereinafter referred to as Hart, and further in view of Swales ("Open MODBUS/TCP Specification", Release 1.0, Schneider Electric, 29 Mar 1999), hereinafter referred to as Swales.

14. Hart disclosed a method and system for monitoring and controlling an electrical distribution network. The system included intelligent electric devices (IEDs), a control computer comprising a server for creating messages intended for the IEDs, and a gateway for communicating with the server and to transmit messages to the IEDs (see column 2, lines 22-67). The server computer communicating with the gateway included various application programs (see column 2, lines 23-28; column 7, lines 16-20). The

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gateway was configured to transmit messages to at least one IED (see column 4, lines 42-55). The gateway was also configured to extract and encapsulate messages from the server to be delivered to IEDs, and to encapsulate return messages from the IEDs for transmission to the server. Hart disclosed encapsulation as a way to allow the use of different network protocols in the system, made possible by encapsulation of a message in a first protocol to a second protocol (see column 13, lines 50-65). In this way, Hart disclosed encapsulation of messages in an industry standard format as claimed. Hart specifically disclosed the use of the MODBUS protocol for use between the server and gateway, and the DNP protocol for use between the gateway and IEDs (see column 14, lines 50-65).

15. While Hart disclosed the use of industry standard protocols for communication in the system, Hart did not specifically disclose the use of TCP/IP for communication of messages in the system.

16. In a related art of electrical distribution network monitoring and controlling, Swales disclosed the MODBUS/TCP protocol. MODBUS/TCP was disclosed as an automation standard and a variant of the well-known MODBUS family of protocols. The MODBUS/TCP protocol extended the use of the MODBUS protocol to an Intranet/Internet environment by using the TCP/IP protocol through Ethernet gateways (see p. 3, section 2).

17. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Hart and Swales to provide a system for communicating messages between an Ethernet server, gateway, and IEDs using the

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TCP/IP protocol to encapsulate messages. Both MODBUS and TCP/IP were well-known standards at the time of invention. As stated above, MODBUS/TCP was in essence a combination of the two standard protocols. One of ordinary skill in the art would have been motivated to consider the use of MODBUS/TCP in the invention of Hart as it offered improvements such as wider tolerance to network performance changes, security, and greater flexibility (see p. 3, section 2.1).

Response to Arguments

18. Applicant's arguments filed 04/25/05 have been fully considered but they are not persuasive. Additionally, Applicant's arguments with respect to claims 1-3, 6-14, and 17-21 have been considered but are moot in view of the new ground(s) of rejection.

19. Regarding claims 1-21 previously rejected under 35 U.S.C. 103(a) as being unpatentable over Hart et al. (U.S. Pat. No. 6,005,759) and further in view of Swales ("Open MODBUS/TCP Specification", Release 1.0, Schneider Electric, 29 Mar 1999), the rejection has been withdrawn. Examiner submits that Hart reads upon the broadly claimed limitations presented as detailed in the above rejection under 35 U.S.C. 102(e).

20. Regarding claim 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Hart et al. (U.S. Pat. No. 6,005,759) and further in view of Swales ("Open MODBUS/TCP Specification", Release 1.0, Schneider Electric, 29 Mar 1999), Applicant asserts that the references do not teach or suggest "a gateway configured to remove the encapsulation of the messages designated to be transmitted to the intelligent end device". Examiner disagrees. As noted by Applicant, the system of Hart received

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messages designated to an intelligent end device (IED), and the messages were then stripped of its encapsulation by a DNP command processor (see column 2, lines 36-38; column 13, lines 55-63; column 14, lines 41-49; column 15, lines 14-22). The messages were then transmitted to the IED as claimed (see column 15, lines 22-25).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Van Doorn et al. (U.S. Pat. No. 6,185,508)

Loucks et al. (U.S. Pat. No. 5,828,576)

Loucks et al. (U.S. Pat. No. 5,650,936)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph R. Maniwang whose telephone number is (571) 272-3928. The examiner can normally be reached on Mon-Fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JM

MARC D. THOMPSON

MARC THOMPSON
PRIMARY EXAMINER